Using learning analytics for course design

An Ontario community college introduced a number of elective courses in a blended format. Some courses had been offered previously in a face-to-face (F2F) format, while others were new courses. This initiative presented an opportunity to use learning analytics to explore whether some course design configurations proved more effective than others.

Background

Student activity data and performance data were compared
- The project compared two elective, blended courses.
- Each course utilized online learning modules, readings, instructor screencasts, low-stakes online quizzes, and active-learning exercises.
- Courses were presented in similar format by the same instructor, however, each course was structured with the online and F2F components in a different order.
- Student activity data and performance data were tracked to determine if the completion of course material differed between courses.

Initial Comparison

Frontloaded design vs bookend
- Both courses shared similar subject matter and were taught by the same instructor.
- One course was delivered with a frontload structure (A) and one with a bookend design (B).

Activity Data
- Students viewed more course content and watched more videos in the frontloaded course (A).

Performance Data
- Students performed better in the frontloaded course.
- They earned higher scores on weekly content quizzes.
- Average final grades were also higher.

Course Redesign

• Inherent difference in student groups may have contributed to the differing levels of engagement and performance.
• To test the effect of design, the subsequent offering of course B was modified to a frontloaded design.
• The same metrics were compared to determine if the new design increased engagement.

Results

• Engagement and performance increased in the redesigned course

Conclusions / Lessons Learned:

While difficult to draw conclusions, this project demonstrated the potential for faculty to use LMS data to inform course design and increase student engagement.